

CLAIMS

[1] A composition comprising a nucleic acid of which target is at least one region selected from the group consisting of a juxtamembrane region, a kinase region and an ATP-binding site region in human Flt3 and which can inhibit the function of Flt3.

[2] A composition comprising a nucleic acid of which target is at least one region selected from the group consisting of the following (a) to (c) and which can inhibit the function of Flt3:

(a) a region corresponding to a cDNA nucleotide sequence of a juxtamembrane region in human normal Flt3 set forth in SEQ ID NO: 27,

(b) a region corresponding to a cDNA nucleotide sequence of a kinase region in human normal Flt3 set forth in SEQ ID NO: 28, and

(c) a region corresponding to a cDNA nucleotide sequence of an ATP-binding site region in human normal Flt3 set forth in SEQ ID NO: 29.

[3] The composition according to claim 1 or 2, wherein the composition comprises a nucleic acid having a length of 15 to 25 bases.

[4] The composition according to claim 1 or 2, wherein the composition comprises an RNA sequence corresponding to at least one nucleotide sequence selected from the group consisting of SEQ ID NOs: 1, 4, 7, 32, 35 and 38.

[5] The composition according to any one of claims 1 to 4, wherein the composition comprises a nucleic acid selected from the group consisting of:

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ

ID NO: 2 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 3 are combined,

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 5 and a nucleic acid having a nucleotide sequence of SEQ ID NO:

5 6 are combined,

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 8 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 9 are combined,

10 a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 33 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 34 are combined,

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 36 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 37 are combined, and

15 a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 39 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 40 are combined.

[6] A composition comprising a vector carrying a nucleic acid of which target is at least one region selected from the group consisting of a  
20 juxtamembrane region, a kinase region and an ATP-binding site region in human Flt3 and which can inhibit the function of Flt3.

[7] A composition comprising a vector carrying a nucleic acid of which target is at least one region selected from the group consisting of the following (a) to (c) and which can inhibit the function of Flt3 in  
25 mammalian cells:

- (a) a region corresponding to a cDNA nucleotide sequence of a juxtamembrane region in human normal Flt3 set forth in SEQ ID NO: 27,
- (b) a region corresponding to a cDNA nucleotide sequence of a kinase region in human normal Flt3 set forth in SEQ ID NO: 28, and
- 5 (c) a region corresponding to a cDNA nucleotide sequence of an ATP-binding site region in human normal Flt3 set forth in SEQ ID NO: 29.

[8] The composition according to claim 6 or 7, wherein the nucleic acid has a nucleotide sequence of 15 to 25 bases of the target region.

[9] The composition according to claim 6 or 7, wherein the composition  
10 comprises a vector carrying a nucleic acid corresponding to at least one nucleotide sequence selected from the group consisting of SEQ ID NOs: 1, 4, 7, 32, 35 and 38, and capable of expressing RNA corresponding to the nucleotide sequence.

[10] The composition according to any one of claims 6 to 9, wherein the  
15 composition comprises a vector carrying a nucleic acid selected from the group consisting of:

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 2 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 3 are combined,

20 a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 5 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 6 are combined,

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 8 and a nucleic acid having a nucleotide sequence of SEQ ID NO:  
25 9 are combined,

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 33 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 34 are combined,

5 a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 36 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 37 are combined, and

a nucleic acid wherein a nucleic acid having a nucleotide sequence of SEQ ID NO: 39 and a nucleic acid having a nucleotide sequence of SEQ ID NO: 40 are combined.

10 [11] The composition according to any one of claims 6 to 10, wherein the composition comprises a vector having, as a promoter, an RNA polymerase III promoter or an RNA polymerase II promoter.

[12] The composition according to claim 11, wherein the promoter is a promoter selected from the group consisting of a U6 promoter, an H1  
15 promoter, a tRNA promoter and a CMV promoter.

[13] The composition according to any one of claims 6 to 12, wherein the composition comprises, as a basic structure, a vector selected from an adenovirus vector, a lentivirus vector and a retrovirus vector.

[14] A method of inducing apoptosis, characterized by selectively inhibiting  
20 growth of FLT3 highly expressing cells and/or FLT3/ITD mutation-containing cells with the composition as defined in any one of claims 1 to 13, thereby inducing apoptosis of the FLT3 highly expressing cells and/or FLT3/ITD mutation-containing cells.

[15] The method according to claim 14, characterized by using an agent  
25 inhibiting kinase in addition to the composition simultaneously or in a

manner using one after another, to selectively inhibit growth of FLT3 highly expressing cells and/or FLT3/ITD mutation-containing cells, thereby inducing apoptosis of the FLT3 highly expressing cells and/or FLT3/ITD mutation-containing cells.

- 5 [16] A kit for carrying out the method as defined in claim 14 or 15, wherein the kit comprises the composition as defined in any one of claims 1 to 13.